

## Life After a Stroke



# University Hospitals Neurological Institute's Comprehensive Stroke Center is the premier leader in stroke care in Northeast Ohio.

As the first hospital in Northeast Ohio to achieve The Joint Commission's standards for Comprehensive Stroke Center Certification, UH Cleveland Medical Center delivers the highest quality stroke care available in the region through the most advanced diagnostic and treatment technologies and the region's most experienced stroke team. This high standard of quality and patient-centered care is available throughout the University Hospitals system at our network of primary stroke centers at conveniently located community facilities.

Our teams of nationally renowned physicians, nurses, rehabilitation specialists and clinical staff successfully tailor highly specialized and advanced medical and surgical therapies to the unique needs of patients who have suffered a stroke.

## CONDITIONS TREATED

- Aneurysms
- Arteriovenous malformations (AVMs), dural and cavernous malformations
- Carotid artery disease
- Cerebral vasculitis (blood vessel inflammation)
- Intracranial stenosis
- Small vessel disease
- Stroke
- Transient ischemic attacks (TIAs) or mini strokes
- Vascular disorders of the brain or spine
- Other unusual causes, including hereditary stroke disorders, mitochondrial disorders and migraine

## MINIMALLY INVASIVE AND NONSURGICAL SOLUTIONS

The Comprehensive Stroke Center offers minimally invasive treatment of complex vascular malformations, including:

- "Knifeless" technologies such as Gamma Knife® and CyberKnife® stereotactic radiosurgery
- Minimally invasive endovascular ablation of aneurysms and AVMs, angioplasty and stenting of extracranial and intracranial stenosis
- Emergency treatment of acute stroke and related conditions

## SURGICAL SOLUTIONS

- Aneurysm repair and artery bypasses
- Carotid artery repair



**American Heart Association  
American Stroke Association  
CERTIFICATION**  
Meets standards for  
**Comprehensive Stroke Center**

**UH Cleveland Medical Center is the first Comprehensive Stroke Center in Northeast Ohio.**

This certification showcases our ability to treat the most complex cases and deliver the highest quality stroke care in the region.

To schedule an appointment, call 216-844-2724.

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### GOALS AND DISCLAIMER

*This information has been designed as an educational guide and is intended to be a supplement information is intended to be a supplement to the care provided by your health care team. It is not intended nor implied to be a substitute for professional medical advice. Please consult your doctor or health care team for information about your specific health condition.*

## Take an Active Role in Your Health



Stroke can be prevented. You can prevent a stroke by taking an active role in your health.

### PRACTICE A HEALTHY LIFESTYLE

- Eat healthy meals of lean proteins, whole grains, vegetables and fruits. Stay away from salty, greasy and fried foods.
- Exercise each day for a healthy weight and to lower your stress.
- Don't smoke, drink too much alcohol or abuse drugs.

### TEAM UP WITH YOUR HEALTH CARE PROVIDER

- Talk with your doctor to find out if you are at risk for a stroke.
- Know your goal numbers for blood pressure, cholesterol and blood sugar. Ask for your numbers. Keep a log to track your progress.
- See your doctor for regular checkups.

### WHAT IF MEDICINES ARE PRESCRIBED?

- Take your medicines each day as directed.
- If you have any problems with your medicines, talk with your health care team to solve the problem.
- Keep a list of your medicines at home and in your wallet. Bring your list to doctor visits.
- Plan ahead so you do not run out of your medicines.

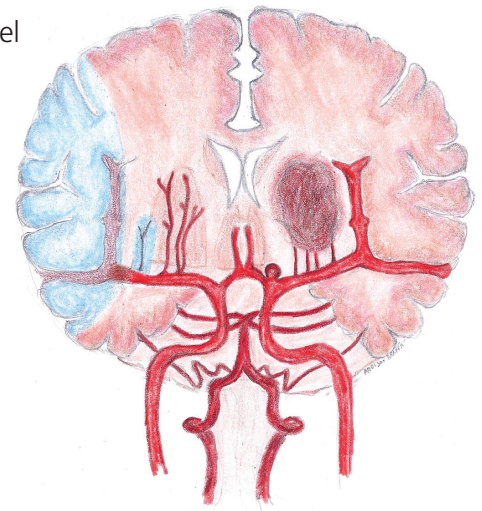
# What is a Stroke?

A stroke or “brain attack” happens when a blood vessel in the brain is blocked or bursts. The brain needs a constant supply of blood and oxygen to work correctly. Without the blood and oxygen it needs, the brain can be injured in minutes. That is why stroke is an emergency.

## TYPES OF STROKES

An **ischemic stroke or cerebral infarction** occurs when a brain blood vessel is blocked. Most strokes are this type. The two most common causes are:

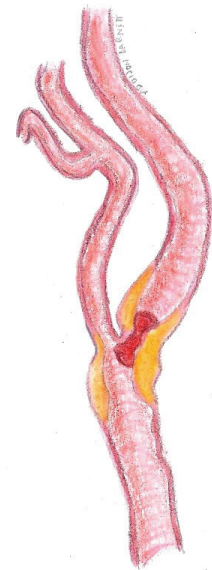
- A fatty deposit, or plaque, blocks blood vessels from bringing blood to the brain. The blood vessels can be as big as a pencil or as small as a hair. Conditions that may lead to this type of stroke include:
  - Carotid artery disease
  - Intracranial disease
  - Lacunar stroke
- Heart disease – blood clots can form in the heart and travel to the brain. Heart conditions that can lead to this type of stroke include:
  - Atrial fibrillation
  - Heart failure and heart attacks
  - Heart valve problems



**Transient ischemic attacks (TIAs)** occur when a blood vessel is blocked for only a short time. TIAs last only 10 – 20 minutes but can be a warning of a future stroke.

**Hemorrhagic strokes** occur when a brain blood vessel breaks or tears, causing bleeding in or around the brain. These are the most serious kinds of stroke. The two main types are:

- **Intracerebral hemorrhage (ICH)** – bleeding into the brain from rupture of a damaged blood vessel. Conditions that can lead to ICH include:
  - Small vessel disease – hypertension, diabetes
  - Amyloid angiopathy – with older age and memory loss
  - AVM – abnormal tangle of blood vessels occurring at any age
  - Blood-thinning medications or bleeding disorders
- **Subarachnoid hemorrhage (SAH)** – bleeding around the brain causing a severe “worst in my life” headache. Conditions that can lead to SAH include:
  - Aneurysm – formed from a weakness in the wall of the blood vessel
  - Blood-thinning medications or bleeding disorders



## Common Tests to Diagnose a TIA or Stroke



**Neurological examination** is a simple bedside test of how well the brain is sending signals to nerves and muscles. It tests the ability to think, speak and understand, seeing and hearing, strength and coordination of the muscles and feeling on the skin. Standing and walking are tested if it is safe to do so.

**CT scan** uses computerized X-rays that quickly take pictures of the brain in thin slices.

**CT angiogram** uses an iodine contrast (or “dye”) to take pictures of the blood vessels in the brain.

**MRI scan** uses magnetic waves to take very detailed pictures of the brain.

**MR angiogram** takes pictures of the blood vessels in the brain. Sometimes a gadolinium contrast (or “dye”) may be used. MRI tests cannot be done in some patients who have metal in their body.

**Cerebral angiogram** is used to take detailed pictures, open blockages or treat ruptures of the blood vessels. For this test, a blood vessel in the groin is numbed with medicine and a long, thin tube or a catheter is threaded up to the brain.

**Electrocardiogram (ECG)** uses small wires pasted on the chest to measure the electrical activity of the heart muscle.

**Telemetry** is a continuous ECG recording that can be done in the hospital or as an outpatient.

**Echocardiogram (TTE)** uses ultrasound waves to take movies of the heart muscle and valves to see how well the heart pumps as it beats.

**Transesophageal echocardiogram (TEE)** takes detailed pictures of the back of the heart. For this test, the throat is numbed with medicine and a small ultrasound camera on a tube is swallowed.

**Carotid ultrasound** uses ultrasound waves to take pictures of the arteries in the neck.

**Transcranial doppler (TCD)** uses ultrasound waves to measure blood flow in the brain arteries.

**Swallowing test** is a simple bedside test to see if it is safe to take medicines, eat or drink. Sometimes other swallowing tests using X-rays or cameras are used.

# Treatments for Stroke

There are many treatments for a stroke, but some can only be given in the first few hours. That is why a rapid response to stroke symptoms is important. Calling 9-1-1 or EMS is the best way to get treatment fast.

## Treatments for ischemic stroke (caused by blocked blood vessels due to clots):

- **tPA (Alteplase)**, the “clot buster drug,” works by dissolving a fresh clot that is blocking a brain artery. It is a medicine that is given intravenously (IV), through a tube in an arm vein. One of the serious side effects of tPA is bleeding, so not everyone can get tPA. Also, tPA can only be given within the first few hours after the start of stroke symptoms.
- **Endovascular therapy or mechanical thrombectomy** is an option for some patients who cannot get tPA or who did not improve with tPA. For this treatment, a long, thin tube, or catheter, is threaded from a blood vessel in the groin up to the brain. Special devices can be put through the catheter to remove the blood clot in the brain artery. One of the serious side effects of this treatment is injury to the brain artery, so not everyone can get this treatment. Also, this treatment can only be given within hours after the start of stroke symptoms.
- **Medicines** are used to prevent another stroke and to treat high blood pressure, blood sugar and cholesterol. There are no medicines that reverse the brain damage from a stroke.
- **Carotid artery repair** may be required to remove a blockage in the carotid artery in the neck and prevent another stroke. This type of treatment is based on how badly the artery is blocked, the location of the blockage and other medical factors. There are two ways to repair the artery. Surgery to fix the artery is called carotid endarterectomy. Endovascular treatment is called carotid stenting.

## Treatments for subarachnoid hemorrhage (caused by blood leaking around the brain from an aneurysm, or ballooning of the wall of a blood vessel).

The type of treatment used will be based on the size and location of the aneurysm and other medical factors. The goal of treatment is to block blood from leaking out of the weak area of the artery and into the brain. Treatment options may include:

- **Aneurysm clipping** is a brain surgery to place a metal clip across the neck of the aneurysm.
- **Aneurysm coiling** is an endovascular therapy where a long, thin tube, or catheter, is threaded from a blood vessel in the groin up to the brain. Special coils are put through the catheter into the aneurysm.
- **External ventricular drain (EVD)** is a small flexible tube that is placed by a neurosurgeon. The tube goes through a small hole in the skull to a space where fluid is made. The EVD will show the pressure level in the brain and can drain fluid when needed.

## Treatments for ICH – intracerebral hemorrhage (caused by blood leaking into the brain causing a hematoma, or bruise in the brain).

The type of treatment used will be based on the size and location of the bruise in the brain and other medical factors.

- **Medicines** are often used to lower blood pressure and you may be given medicines to stop further bleeding.
- **Surgery** may be advised to remove part of the bruise or lower the pressure in the brain. Surgery may be needed to fix an abnormal blood vessel if that was the cause of the ICH.
- **External ventricular drain** helps to show the pressure level in the brain and drain fluid when needed.

# Avoiding Complications from Stroke

## DEEP VENOUS THROMBOSIS

Deep venous thrombosis (DVT) is a blood clot in a deep vein. The biggest risk is a strain on the lungs and heart that would happen if the clot travelled to the chest. DVTs happen when the muscles are not moving due to weakness, surgery or staying in bed for long periods of time after a stroke. To lessen the risk of blood clots after a stroke, blood-thinning medicine, like heparin injections, and compression stockings are used. Getting up and out of bed, leg exercises and regular walking also help prevent DVT and pulmonary embolism (PE).

## FALLS

Staying safe in the hospital and at home is very important. Falls are more common if you are tired or confused or the stroke has made you weak or unsteady. Use the call button to call for help at any time, to get out of bed or go to the bathroom.

## PNEUMONIA

Pneumonia is a lung infection that can be caused by a swallowing problem called dysphagia. To lessen the risk of pneumonia after stroke, your swallowing will be tested by your nurse or speech therapist. They will see if you are safe to eat and drink healthy foods or need a special diet for swallowing problems. If you are not safe to eat or drink by mouth, a feeding tube may be used until the swallowing muscles recover.

## PRESSURE INJURIES

Pressure injuries may form when there is poor blood flow to the skin and muscles covering the bony parts of the body. Injury can be caused by too much pressure from the surface of a bed or a chair. This is more common when sitting or lying in bed for long periods of time, especially if there are problems with feeling on the skin, bladder and bowel control, or poor circulation. To avoid pressure, the body should be shifted every two hours in bed and every one hour if sitting. Keeping the skin clean and moisturized is important, too.



## Clinical Trials for Stroke

Clinical trials are research studies that test promising new treatments to treat or prevent stroke. Our standard treatments for stroke were shown to be safe and of value by studying them in clinical trials. There are many clinical trials that are ongoing. If you are eligible for a clinical trial, your doctor will discuss this with you.

To learn more and see all the current clinical trials, you can go to [UHhospitals.org/NeuroClinicalTrials](http://UHhospitals.org/NeuroClinicalTrials) and search under the term "Stroke."

# Effects of a Stroke

The brain is like a computer. Each part of the brain does a special job. When brain cells become damaged, the functions they controlled are impaired or lost. The effects of a stroke can be mild or severe, temporary or permanent.

Most of the brain is divided into two halves, a left side and a right side. The two sides control different functions.

The effects of a stroke will vary based on the area of the brain in which the damage occurs:

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## RIGHT SIDE OF THE BRAIN

- Weakness of the left side of the body
- Numbness of the left side of the body
- Loss of musical abilities and rhythm
- Loss of spatial awareness
- Depression or frustration

## FRONT OF THE BRAIN

- Difficulty with problem solving and planning
- Poor judgment
- Memory loss

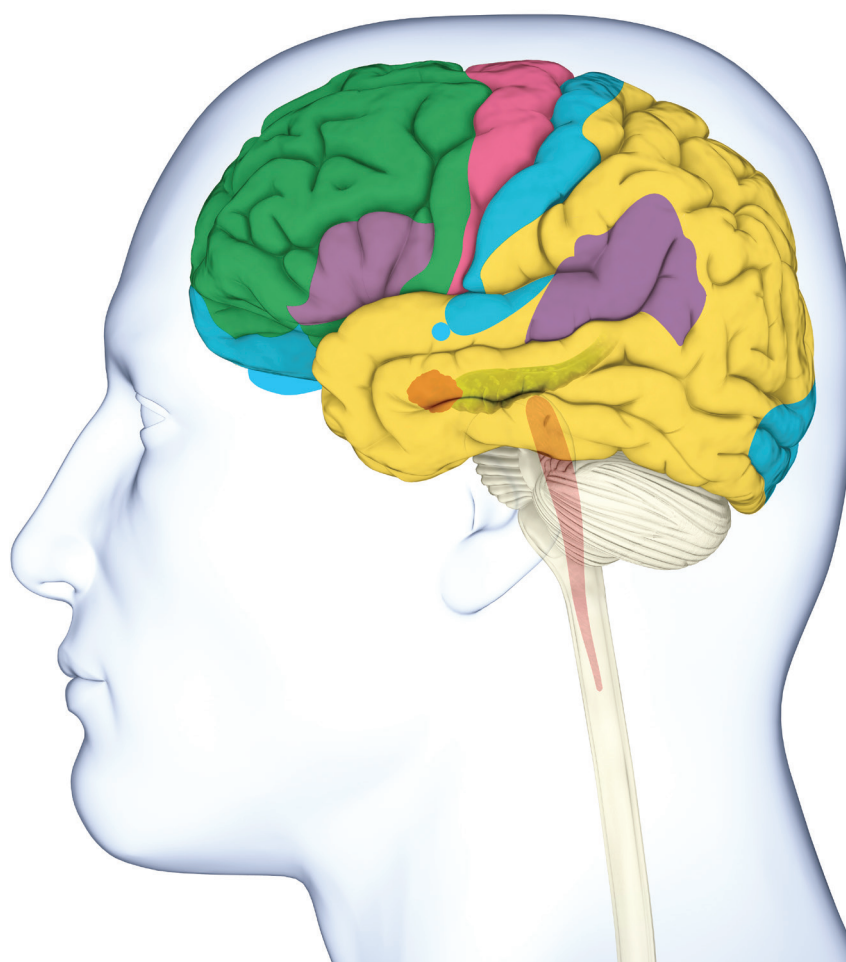
## LEFT SIDE OF THE BRAIN

- Weakness of the right side of the body
- Numbness of the right side of the body
- Difficulty finding words, speaking or writing
- Difficulty understanding what other people say
- Impulsiveness or recklessness

## BACK AND BASE OF THE BRAIN

- Unable to see to one side or both sides
- Abnormal eye movements
- Breathing and swallowing problems

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## To check if someone is having a stroke, ask the person to **Give Me 5!**

Stroke is the fifth-leading cause of death in the United States and a leading cause of disability. However, research shows the public remains unaware of stroke's warning signs and the need for immediate medical attention. Even if the symptoms subside, call 9-1-1! **Things to look for or ask:**

### **1 Walk**

#### **Is their balance off?**

- Are they able to stand straight and tall? Or do they slump to one side?
- Do they appear to have lost strength on one side of their body?
- Are they leaning to one side when they try to walk?
- Are they veering off to one side?
- Are they dragging the foot on the side they are leaning toward?
- Can they tell you whether they can feel the side that they are leaning toward?

### **2 Talk**

#### **Is their speech slurred or face droopy?**

- Are they having problems speaking?
- Are they having problems "getting their words out"?
- Do they sound like they have something in their mouth when they speak?
- Are they saying the appropriate words (do their words make sense) when they speak?
- Does one side of their mouth droop down?

### **3 Reach**

#### **Is one side weak or numb?**

- Ask the person to raise both of their arms up together. Does one arm begin to fall down?
- Ask the person to squeeze your fingers with each hand; is one hand weaker than the other?
- If you ask the person to try to hold something like a pen, can they do it without any difficulty?
- Can the person feel you touch them on their arm? Lightly touch them on the skin of both arms, and ask them if the feeling is the same on each.

### **4 See**

#### **Is their vision all or partly lost?**

- Ask the person about their vision. Do they normally wear glasses or contact lenses, or do they normally not use either of these? Ask the person to try to describe any changes in their vision.
- Is their vision clear?
- Is it blurry?
- Can they see everything in their field of vision?
- Does the person see everything or just part of the visual field?
- Does the person see double?

### **5 Feel**

#### **Is their headache severe?**

- Do they have a headache? On a scale of 1 – 10, 10 being the worst, ask them to rate their headache.
- Do they normally have headaches? If so, is this headache any different from their usual headache?
- Does this feel like the worst headache of their life?
- Does light bother or hurt their eyes?
- Does a sound or loud noise make the headache worse?

### **Don't wait. Call 9-1-1!**

If you see one of these symptoms, even if it goes away, do not wait! Call 9-1-1 immediately; this person may be having a stroke.

# How Can I Prevent a Stroke?

## DID YOU KNOW?

- Once you have had a stroke, you are at risk for having another one. About 25 percent of strokes happen in people who have had one stroke.
- There are many risk factors, or causes of stroke. There are many things you can do to be healthier.

## THINGS YOU CAN DO TO PREVENT A STROKE

- **Stop smoking.** The risk of stroke drops after being smoke-free for two to four years.
- **Exercise.** Exercise lowers your stroke risk. Try to work out for a total of 30 minutes each day.
- **Eat healthy meals.** Healthy foods can help you control your blood sugar, cholesterol and blood pressure. Your doctors will order a healthy diet for you to help you get better. Ask to talk to a dietitian to get tips to help you eat healthy at home.
- **Control your weight.** Being overweight doubles your risk of stroke and leads to diabetes. Measure your waistline around your midsection. If you are a man, it should be less than 40 inches. If you are a woman, it should be less than 35 inches. If you are overweight, speak with your doctor about a plan to lose weight.
- **Limit alcohol.** Men should drink no more than two servings of alcohol each day. Women who are not pregnant should have no more than one serving of alcohol each day. Women who are pregnant should not drink.
- **Do not use illegal drugs.** Drug abuse, especially cocaine, can cause bad spikes in blood pressure and cause strokes and heart attacks.

## TEAM UP WITH YOUR DOCTORS

- **Know your health problems.** Talk with your health care team to know your risk factors for stroke. Make a plan to see your doctor for regular checkups after you leave the hospital.
- **High blood pressure** – or hypertension – is the number one cause for stroke. High blood pressure can cause both blockages and leaking of blood vessels in the brain.
- **High blood sugar** – or diabetes – can also cause heart attacks, poor blood flow in the legs, blindness and kidney failure.
- **High cholesterol** – or hyperlipidemia – can also cause heart attacks and poor blood flow in the legs. A low-fat diet helps but many people have poor metabolism and also need to take medicine.
- **Heart disease** can cause a stroke when a clot formed in the heart travels to the brain. Atrial fibrillation (Afib) is an irregular heart rhythm and the most common cause of stroke in the elderly. Most people over age 65 should take a blood-thinning medicine called an anticoagulant to prevent a stroke. If you take an anticoagulant medicine, will need regular checkups to make sure you are getting the right amount. Too little will not protect against a stroke and too much can cause abnormal bleeding.
- **Carotid artery disease.** The carotid arteries are large blood vessels in the neck that supply most of the blood flow to the brain. The carotid arteries can become blocked by a fatty build-up, called plaque. This is called atherosclerosis, or “hardening of the arteries.” Less often, the arteries in the neck can be injured and rip; this is called a dissection. Treatments for blocked arteries include controlling stroke risk factors and taking a blood-thinning medicine like aspirin. Repairing the blockage may be advised.
- **Clotting disorders** are uncommon causes of stroke but smoking, taking estrogen, birth control pills or having cancer can increase the risk of blood clots.

# Know Your Numbers

## High blood pressure (hypertension)

- **Normal blood pressure:** 120/80 mm/Hg or less
- **Goal blood pressure for treatment:** Less than 140/90 mm/Hg
- **Goal blood pressure if you have diabetes or other high-risk conditions:** Less than 130/80 mm/Hg

**High blood sugar (diabetes)** – is diagnosed if the fasting blood sugar is over 126 mg/dl or if the HbA1c blood test is over 6.5 percent.

- **Normal blood sugar:** Before eating, a normal blood sugar is between 70 and 100 mg/dl
- **Pre-diabetes:** A1c 5.7% - 6.4%. Take the Risk Quiz at [CDC.gov](http://CDC.gov)
- **Goal blood sugar for treatment:** A fasting blood sugar of 90 – 130 mg/dl, a random blood sugar of less than 180 mg/dl and a HbA1c of less than 7 percent

## High cholesterol (hyperlipidemia)

- **Ideal cholesterol:**
  - Total cholesterol less than 200 mg/dl
  - LDL cholesterol (“the bad one”) less than 100 mg/dl
  - HDL cholesterol (“the good one”) more than 60 mg/dl
  - Triglycerides less than 150 mg/dl
- **Goal cholesterol for treatment:** LDL cholesterol less than 100 mg/dl
- **Goal cholesterol for treatment if you have diabetes or other high-risk conditions:** LDL cholesterol less than 70 mg/dl

DATE	WEIGHT	BLOOD PRESSURE	PULSE	TEST RESULTS AND NOTES
		/		
		/		
		/		
		/		
		/		
		/		
		/		
		/		

## Common Medicines for Stroke Patients

MEDICINE	EXAMPLES	HOW IT WORKS	SIDE EFFECTS/WHAT TO WATCH FOR
<b>Antiplatelet Drugs</b>	Aspirin Clopidogrel (Plavix) Ticagrelor (Brilinta)	Makes blood less likely to clot	<ul style="list-style-type: none"> <li>• Bruising or bleeding</li> <li>• Stomach upset, diarrhea</li> <li>• Rash</li> </ul>
<b>Anticoagulants</b>	Warfarin (Coumadin) Dabigatran (Pradaxa) Rivaroxaban (Xarelto) Apixaban (Eliquis) Heparin injections Enoxaparin injections (Lovenox)	Makes blood less likely to clot	<ul style="list-style-type: none"> <li>• Bruising or bleeding</li> <li>• Warfarin needs monthly blood testing. There are many interactions with medicines and foods.</li> <li>• All anticoagulant medicines require close follow-up with your doctor and blood tests to measure kidney function.</li> </ul>
<b>Statins</b>	Simvastatin (Zocor) Pravastatin (Pravachol) Atorvastatin (Lipitor) Rosuvastatin (Crestor)	Lowers cholesterol	<ul style="list-style-type: none"> <li>• Muscle aches like the flu</li> <li>• Liver problems</li> <li>• Headache</li> </ul>
<b>ACE Inhibitors</b>	Lisinopril (Zestril, Prinivil) Enalapril (Vasotec) Captopril (Capoten)	Lowers blood pressure by relaxing blood vessels	<ul style="list-style-type: none"> <li>• Dry annoying cough</li> <li>• High potassium levels or kidney problems</li> <li>• Swelling of lips or tongue – report right away</li> </ul>
<b>Diuretics</b>	Hydrochlorothiazide (HCTZ, Microzide) Furosemide (Lasix)	Lowers blood pressure by removing excess water	<ul style="list-style-type: none"> <li>• Dizziness if blood pressure too low</li> <li>• Will make you urinate more</li> <li>• Low potassium levels or kidney problems</li> </ul>
<b>Beta Blockers</b>	Metoprolol (Lopressor, Toprol XL) Atenolol (Tenormin) Carvedilol (Coreg)	Lowers heart rate and blood pressure, helps heart work better	<ul style="list-style-type: none"> <li>• Dizziness if blood pressure or heart rate too low</li> <li>• May worsen asthma symptoms</li> <li>• Less tolerance for physical activity</li> </ul>
<b>Calcium Channel Blockers</b>	Amlodipine (Norvasc) Diltiazem (Cardizem) Verapamil (Calan) Nimodipine (Nymalize)	Lowers blood pressure by relaxing blood vessels	<ul style="list-style-type: none"> <li>• Dizziness if blood pressure too low</li> <li>• Ankle swelling</li> <li>• Facial flushing</li> <li>• Headaches</li> </ul>
<b>ARBs</b>	Valsartan (Diovan) Candesartan (Atacand) Losartan (Cozaar)	Lowers blood pressure by relaxing blood vessels	<ul style="list-style-type: none"> <li>• Dizziness if blood pressure too low</li> <li>• High potassium levels or kidney problems</li> <li>• Swelling of lips or tongue – report right away</li> </ul>
<b>Diabetic Medications</b>	Insulin injections Metformin (Glucophage) Glipizide (Glucotrol)	Lowers blood sugar	<ul style="list-style-type: none"> <li>• Dizziness, confusion if blood sugar too low</li> <li>• Redness, itching, swelling at injection site</li> </ul>
<b>Anticonvulsants</b>	Levetiracetam (Keppra) Phenytoin (Dilantin) Lacosamide (Vimpat)	Prevents seizures	<ul style="list-style-type: none"> <li>• Irritability</li> <li>• Drowsiness</li> <li>• Rash</li> </ul>
<b>Antihypertensive</b>	Hydralazine (Apresoline)	Lowers blood pressure by relaxing blood vessels	<ul style="list-style-type: none"> <li>• Dizziness if blood pressure too low</li> <li>• Headaches</li> </ul>

*This list of medicines does not include all uses or side effects. Your nurse will provide you with more information about your medicines.*

# How to Quit Smoking

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Smoking cigarettes and other tobacco products causes damage to the lining of blood vessels in the body causing blockages and clots to form. These blockages can cause a stroke, heart attack and poor circulation. Smoking also decreases the supply of oxygen to tissues. By quitting smoking, you can live longer, cut your risk of having another stroke, feel better with more energy and save money.

## HOW DO YOU STOP?

If you have tried to quit in the past, you know it is not easy. As soon as you stop smoking, your risk of stroke goes down. Here are some tips to help you quit:

- Make a list of all the reasons you want to quit (e.g., my health, the health of my family, cost, smell of smoke on clothes).
- Get help from friends and family. Find a friend or family member to stop smoking with. Avoid others who smoke.
- Stop smoking all at once. Throw away all cigarettes, matches/lighters and ashtrays. Do not let people smoke in your home or car. Make a clean start – NOPE (Not One Puff Ever).
- Stay busy. Find something else to do instead of smoking, such as exercising, taking a walk, doing some chores or trying a new hobby.
- Replace smoking with sugarless gum or candy. Eat a piece of fruit, celery or carrot sticks, or sunflower seeds when you have the urge to smoke.
- Change your routine. Most people smoke at certain times during the day (while drinking coffee, after a meal, watching TV, driving in the car). Know when you are most likely to smoke and make changes in your routine.
- Add up the amount of money you spend per day, month and year on cigarettes. Make a list of what you could buy with that money instead. Treat yourself with the money you have saved.
- Talk to your health care team about counseling resources and nicotine products.



# Nutrition

## GOOD FOOD CHOICES

- Low-fat proteins include fish, soy products, nuts, seeds, beans, and low-fat or fat-free dairy products. Baking, broiling, steaming, roasting or poaching are healthy ways to cook meats.
- Fruits and vegetables with bright colors are low in calories and high in vitamins and minerals. Add these to each meal and snack time.
- Whole grains, like whole wheat, oats, barley and rye, contain vitamins, minerals and fiber that help lower cholesterol and blood pressure.
- “Good fats” that can lower your cholesterol include canola, olive, safflower and soybean oil, nuts, avocados, salmon, albacore tuna and flaxseed.
- Use herbs and other spices instead of salt to flavor foods. Choose foods with less than 140 mg sodium per serving and less than 600 mg sodium per meal to keep daily sodium intake to 1500 mg or less.

## FOODS TO AVOID

- “Bad fats” like saturated fat or trans fats, can raise your cholesterol and include all types of animal fat (chicken skin, fat on beef, dark meat), egg yolks, whole milk dairy products, palm oil, coconut oil, cocoa butter, lard, shortening, butter, prepackaged snacks or “junk food.”
- Salty foods like chips and crackers, processed and prepackaged foods, canned vegetables, canned soups, deli meats, processed cheese, fast foods, frozen dinners, vegetable juice and condiments.
- Get rid of the salt shaker.  
1 teaspoon of salt = 2300 mg of sodium.
- Foods high in simple sugars such as regular soda, cake, pie, cookies and donuts.



## How to Read a Food Label

### WHAT IS ONE SERVING?

#### Protein

Fish, poultry, meat, tofu = 3 – 4 oz.,  
1 snack = 1 – 2 oz.

Milk = 1 cup

Cheese = 1 oz.

Yogurt = ½ cup

Vegetables, fruits = about ½ cup

Carbohydrates = 15 grams of carbohydrate

Look for foods with 3 or more grams  
of fiber per serving

Sample label for  
Macaroni & Cheese

Nutrition Facts	
Serving Size 1 cup (228g) Servings Per Container 2	
Amount Per Serving	
<b>Calories</b> 250	Calories from Fat 110
<b>% Daily Value*</b>	
<b>Total Fat</b> 12g	18%
Saturated Fat 3g	15%
Trans Fat 3g	
<b>Cholesterol</b> 30mg	10%
<b>Sodium</b> 470mg	20%
<b>Total Carbohydrate</b> 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
<b>Protein</b> 5g	
Vitamin A	4%
Vitamin C	2%
Calcium	20%
Iron	4%

\* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs.

	Calories: 2,000	2,500
Total Fat	Less than 65g	80g
Sat Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Total Carbohydrate	300g	375g
Dietary Fiber	25g	30g

**Start Here** →

**Check Calories**

**Limit these Nutrients**

**Get Enough of these Nutrients**

**Footnote**

**Quick Guide to % DV**

- 5% or less is Low
- 20% or more is High

# Setting Goals for Your Recovery



Setting goals is a vital part of the stroke healing process. People who set goals get more things done. See your goal as a series of small steps.

**Short-term goals** are things that you can achieve in one or two weeks.

**Long-term goals** are things that may take weeks to months to complete.

Your goals should be **SMART**:

Specific – A clear action. Try not to make general goals.

Measurable – Keep track of your progress on a calendar or log.

Attainable – Choose a goal you can reach.

Realistic – Believe that you will succeed.

Timely – Set a time frame for reaching your goals.

## SAMPLE GOALS AND PLANS

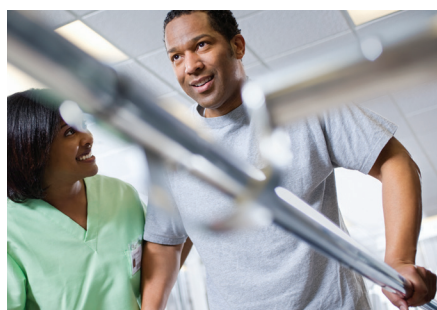
- I will quit smoking.  
*Plan: 1. Get ready and set a date. 2. Get support and encouragement from family and friends. 3. Learn new skills and behaviors. 4. Talk to my doctor about medicine to help me quit. 5. Be prepared for difficult situations where I will be tempted.*
- I will exercise every day to be healthy.  
*Plan: 1. Get ready and pick an exercise, such as walking. 2. Get support and encouragement from family and friends. 3. Track my exercise on a calendar. 4. Be prepared for difficult situations where I am not motivated to exercise.*
- I will eat a healthy diet.
- I will take my medicines each day.
- I will get my blood pressure under control.
- I will follow up with medical care after discharge.

**Celebrate your progress!**

## Planning for Hospital Discharge

Planning for your needs after your hospital stay starts the day you are admitted to the hospital. Your doctors, nurses and therapists will evaluate what you might need at discharge. Your discharge planning team will:

- Meet with you to talk about your needs.
- Offer choices based on your health care team's recommendations.
- Work with your family if you are able to be cared for at home.
- Arrange for a rehabilitation facility if you need one at discharge.
- Confirm what care your insurance covers.
- Arrange a ride at discharge.
- Counsel and provide emotional support.
- Provide information about local programs, resources and respite care.
- Assess your ability to pay for your medications.



## Recovery After a Stroke

It is normal to need some help as you recover from a stroke. Rehabilitation – or rehab – will help you regain as much function as possible.

**PHYSICAL THERAPY** –  
for strength, mobility, balance

**OCCUPATIONAL THERAPY** –  
for activities of daily living

**SPEECH THERAPY** –  
for speech, language, swallowing

**COGNITIVE THERAPY** –  
for memory, activities of daily living

### TYPES OF REHABILITATION:

- **Outpatient therapy** – You go to an outpatient therapy center near your home, usually two to three times a week, until you meet your goals.
- **Home health care** – Provides therapy in your home if you are homebound. Visits from home health care staff may occur a few times a week until you can go to outpatient therapy.
- **Acute rehabilitation facility** – Provides daily nursing care and at least three hours of intensive therapy daily, usually physical, occupational and speech therapy.
- **Sub-acute rehabilitation facility** – Provides daily nursing care and less than three hours of therapy daily. This is offered at a skilled nursing facility (SNF) for short amounts of time or at a skilled nursing home if a longer stay is needed.
- **Long-term acute care hospital (LTACH)** – Provides 24-hour nursing care to manage complex medical problems in addition to therapy.



# Coping with a Stroke

A stroke can affect your lifestyle and cause changes in the way your loved one feels and acts. These changes may cause you to worry about your loved one at home. Some common concerns are:

## LANGUAGE PROBLEMS

Damage to the language center in the brain causes a problem called aphasia. Aphasia can be very frustrating for both you and your loved one. They may be able to hear words or see them in print, but not be able to make sense of them. They may know what they want to say but have a hard time finding words or saying what they mean. Try to use short, simple sentences and give them time to try to speak. Speech and language therapy can help.

## MEMORY LOSS

Stroke is a common cause of memory problems. Your loved one may forget things or have trouble remembering new things. They may find it hard to pay attention or follow directions. It helps to have a daily routine and have them do only one thing at a time. Making the habit of putting things away in the same place makes them easier to find. Speech and occupational therapists and neuropsychology specialists can help.

## BEHAVIOR CHANGES AND DEPRESSION

Some stroke survivors may not act like their former selves. Your loved one may seem more careful, worried or anxious. Feeling tired is common. They may laugh or cry for no reason and it may be hard for them to control their feelings. Although it is normal for your loved one to feel frustrated and sad after a stroke, some survivors get depressed. Depression can be overwhelming. It can affect their spirit and confidence.

## SIGNS OF DEPRESSION MAY INCLUDE:

- Little interest or pleasure in doing things
- Feeling down or hopeless
- Irritability and difficulty getting along with others
- Feeling bad about self or letting others down
- Poor appetite or problems sleeping

You can help your loved one by listening to their concerns, joining a support group, and providing chances to take part in leisure and spiritual activities. Chronic depression can be treated with counseling or medicine. If depression is a problem, reach out to a mental health expert for help.

## NEGLECT

After a stroke, your loved one may neglect or ignore one side of their body. This is more common when the stroke is on the right side of the brain. For example, they may not be able to dress one side of their body or only eat on one side of a dinner plate. This often improves with time but they need help to draw their attention to the neglected side.

## BLADDER AND BOWEL PROBLEMS

Problems with bladder and bowel control are common after a stroke. Most survivors are able to regain control with time and therapy. Reminding your loved one to go to the bathroom on a regular schedule is important. At the beginning, every two or three hours – whether they feel the urge or not – will help retrain the muscles. Drinking plenty of fluids during the day and getting exercise helps, too.

## PAIN

Pain after stroke can be due to different causes. Central pain is due to abnormal signals from the damaged part of the brain and can affect any part of the body. Joint pain, most often in the shoulder, can result from strain due to weak or tight muscles. Talk with your doctor to find the best treatment for the pain so it does not interfere with your loved one's recovery.

## DRIVING CONCERNS

If the stroke has caused problems with vision, attention, judgment or coordination, your loved one will be advised not to drive. These problems may improve over time and with therapy. Discuss driving with the doctor at your follow-up visit. Your loved one may need a driving assessment before getting back in the driver's seat.

# Support for Caregivers



Stroke survivors who have a strong support system have a better recovery. However, being a caregiver can be hard work. It is normal to feel unsure, fearful or overwhelmed about your new role as a caregiver.

Things you can do:

- Learn more about stroke and what to expect. This can help you feel more in control.
- Seek help with caregiver duties.
  - Ask your discharge planning team about available services.
  - Reach out to family and friends. Be honest and ask for their help.
- Seek emotional support for yourself.
  - Join a stroke support group to talk with others who understand.
  - Call the Stroke Family Warmline at 1-888-4-STROKE (1-888-478-7653).
  - Think about asking for help from pastoral counselors or mental health experts.
- Take time out to care for yourself.
  - Eat a balanced diet.
  - Exercise regularly.
  - Find time to do one hobby once a week.
  - Socialize with family and friends.

## LEARN MORE ABOUT RESPITE CARE

Respite care is planned or emergency care for the stroke survivor that allows the caregiver a brief relief or a break. A healthy caregiver has access to regular respite time that allows one to fulfill his or her own needs. Respite care must also be safe and enjoyable for your loved one. Respite care programs include adult day care, home-based care or health care facilities. To find out more, you can talk to your discharge planning team, visit [eldercare.acl.gov](http://eldercare.acl.gov) or use the national respite care locator at [archrespite.org](http://archrespite.org).

## LEARN MORE ABOUT PALLIATIVE CARE

Palliative care is patient- and family-centered care that improves the quality of life by anticipating, preventing and treating suffering. Palliative care is appropriate for all patients with serious illness, regardless of the stage of their illness, and not just for end-of-life care. To find out more, you can ask to see one of our palliative care providers.

## Share your Wishes About Medical Care

There have been many advances in treatments for stroke. Some of these improve recovery and the quality of life for stroke survivors. Some reduce the risk of having another stroke. Clinical research studies are ongoing to find new medicines or treatments for stroke.

You can share your wishes about your medical care. There are two forms you can use – called advance directives – because you make your wishes known in advance.

- **Health Care Durable Power of Attorney** – someone you name to make medical choices for you.
- **Living Will** – is your wishes on medical treatments at the end of life.

It can be hard to think about the future, but the best time to talk with your family is now. If you were to get too sick to make your wishes known, this would help your family and doctors understand what you would want. If you would like more information, please ask your social worker or anyone on your team.



## Health Information Resources

### STROKE

#### National Institutes of Health (NIH)

[www.nlm.nih.gov/medlineplus](http://www.nlm.nih.gov/medlineplus)

*includes stroke information in many different languages*

#### Centers for Disease Control and Prevention (CDC)

[www.cdc.gov/stroke](http://www.cdc.gov/stroke)

#### American Stroke Association

1-888-478-7653 for a local office

[www.StrokeAssociation.org](http://www.StrokeAssociation.org)

#### National Stroke Association

1-800-787-6537

[www.Stroke.org](http://www.Stroke.org)

### APHASIA

#### National Aphasia Association

[www.aphasia.org](http://www.aphasia.org)

### BRAIN ANEURYSM

#### Brain Aneurysm Foundation

[www.bafound.org](http://www.bafound.org)

### DIABETES

#### American Diabetes Association

1-800-342-2383

[www.Diabetes.org](http://www.Diabetes.org)

### HEART DISEASE

#### American Heart Association

1-800-242-8721 for a local office

[www.heart.org](http://www.heart.org)

### WELLNESS

#### NetWellness

includes many topics, including stroke

[www.NetWellness.org](http://www.NetWellness.org)

### SMOKING CESSATION

Ohio Tobacco Quit line: 1-800-quit-now (1-800-784-8669).

[www.ohio.quitlogix.org](http://www.ohio.quitlogix.org)

## Other Resources

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### CAREGIVING

**ARCH National Respite Network** – sponsors a respite care locator for your area  
[www.archrespite.org](http://www.archrespite.org)

**Benjamin Rose** – helps adults age 60 and over living in Cuyahoga County with social, health and supportive services, and an adult day care program  
216-791-8000  
[www.benrose.org](http://www.benrose.org)

**Eldercare Locator** – sponsored by the U.S. Administration on Aging, locates services for older adults and their families – 1-800-677-1116  
[www.eldercare.acl.gov](http://www.eldercare.acl.gov)

**Jewish Family Services** – a behavioral and health organization serving the greater Cleveland community  
216-292-3999  
[www.jfsa-cleveland.org](http://www.jfsa-cleveland.org)

**Meals on Wheels Association of America** – a national organization representing community-based senior nutrition programs – 1-888-998-6325  
[www.mowaa.org](http://www.mowaa.org)

**National Alliance for Caregiving** – coalition of over 50 organizations that support caregivers  
[www.caregiving.org](http://www.caregiving.org)

**United Way** – 216-436-2100 to find help in Greater Cleveland  
2-1-1 is a three-digit number for access to health and human services  
[www.unitedwaycleveland.org](http://www.unitedwaycleveland.org)

**Visiting Nurse Association** – community-based home health care – 1-877-698-6264  
[www.vnaohio.org](http://www.vnaohio.org)

**YMCA** – 1-800-872-9622  
[www.ymca.net](http://www.ymca.net)

### GOVERNMENT

**Louis Stokes Cleveland VA Medical Center** – 10701 East Boulevard, Cleveland, Ohio 44106 – 216-791-3800  
VA Caregiver Support Line – includes respite care – 1-855-260-3274  
[www.va.gov](http://www.va.gov)

**Social Security Administration** – for Social Security Disability Insurance (SSDI), Supplemental Security Income (SSI) and Medicare – 1-800-772-1213  
[www.ssa.gov](http://www.ssa.gov)

**DRIVING EVALUATION PROGRAMS** – or contact your local hospital as many offer assessments of safe driving skills and recommendations for car modifications

**Menorah Park** – 216-360-8221

**University Hospitals Geauga Medical Center** – 440-214-3100

### TRANSPORTATION

**LakeTran** – provides fixed route and dial-a-ride service in and around Lake County, Cleveland, Painesville, Mentor and Madison – 1-888-525-3872  
[www.laketrans.com](http://www.laketrans.com)

**Regional Transit Authority (RTA)** – offers bus passes at a reduced rate for eligible people with disabilities – 216-621-9500

**RTA Paratransit of Cleveland** – provides transit service to Cuyahoga residents who are handicapped or age 65 and older; prescheduled, door-to-door service is available within specific areas – 216-621-9500  
[www.riderta.com/paratransit](http://www.riderta.com/paratransit)

**Ohio Department of Aging** – provides information on driving safely and alternatives to driving  
[www.aging.ohio.gov/transportation](http://www.aging.ohio.gov/transportation)

## Our Locations

The Comprehensive Stroke Center offers unparalleled access and availability through its hub at UH Cleveland Medical Center and an ever-growing network of Primary Stroke Centers at our conveniently located community hospitals. The continued expansion of neurology, advanced neurodiagnostics and neurosurgical capabilities at our community medical and health centers brings our stroke and cerebrovascular expertise and personalized care closer to home to those in outlying areas of Northeast Ohio.

The University Hospitals System Stroke Program ensures that each of our locations has access to the same level of clinical expertise and the most advanced treatment options and technologies. This approach ensures that patients receive the same high quality of care, regardless of location.

### OUR STROKE NETWORK

#### UH CLEVELAND MEDICAL CENTER

11100 Euclid Avenue  
Cleveland, Ohio 44106  
216-844-2724

#### UH AHUJA MEDICAL CENTER

3999 Richmond Road  
Beachwood, Ohio 44122  
216-593-5500

#### UH BEDFORD MEDICAL CENTER, a campus of UH Regional Hospitals

44 Blaine Avenue  
Bedford, Ohio 44146  
440-735-4775

#### UH CONNEAUT MEDICAL CENTER

158 West Main Road  
Conneaut, Ohio 44030  
440-593-0356

#### UH ELYRIA MEDICAL CENTER

630 East River Street  
Elyria, Ohio 44035  
440-329-7500

#### UH GEAUGA MEDICAL CENTER

13207 Ravenna Road  
Chardon, Ohio 44024  
440-285-6000

#### UH GENEVA MEDICAL CENTER

870 West Main Street  
Geneva, Ohio 44041  
440-466-1141

#### UH PARMA MEDICAL CENTER

7007 Powers Boulevard  
Parma, Ohio 44129  
440-743-3000

#### UH PORTAGE MEDICAL CENTER

6847 North Chestnut Street  
Ravenna, Ohio 44266  
330-297-0811

#### UH RICHMOND MEDICAL CENTER, a campus of UH Regional Hospitals

27100 Chardon Road  
Richmond Heights, Ohio 44143  
440-585-6137

#### UH ST. JOHN MEDICAL CENTER

29000 Center Ridge Road  
Westlake, Ohio 44145  
440-835-6160

#### UH SAMARITAN MEDICAL CENTER

1025 Center Street  
Ashland, Ohio 44805  
419-289-0491

#### SOUTHWEST GENERAL HEALTH CENTER

18697 Bagley Road  
Middleburg Heights, Ohio 44130  
440-816-5050

# UH Outpatient Rehabilitation Services Locations

## WEST

**UH Independence Health Center**  
6150 Oak Tree Boulevard, Suite 150B  
Independence, OH 44131  
T: 440-743-8175 | F: 216-201-6225

**UH Wellpoint Health Center**  
303 East Royalton Road  
Broadview Heights, OH 44147  
T: 440-743-4685 | F: 440-743-4664

**UH Westlake Health Center**  
960 Clague Road, Suite 3100  
Westlake, OH 44145  
T: 440-250-2040 | F: 440-250-2041

**\*UH St. John Medical Center  
Westlake Family Health Building**  
26908 Detroit Road, Suite 300  
Westlake, OH 44145  
T: 440-414-6050 | F: 440-925-5194

**UH Sheffield Health Center**  
5001 Transportation Boulevard,  
Suite 202  
Sheffield Village, OH 44054  
T: 440-329-2890 | F: 440-329-2885

**Southwest General Brunswick  
Medical Center**  
4065 Center Road  
Brunswick, OH 44212  
T: 440-816-5607 | F: 440-816-5608

**Southwest General Strongsville  
Medical Center**  
18181 Pearl Road  
Strongsville, OH 44136  
T: 440-816-4920 | F: 440-816-4919

**UH Elyria Medical Center  
at North Ridgeville**  
39000 Center Ridge Road  
North Ridgeville, OH 44039  
T: 440-329-7527 | F: 440-329-7318

**LifeWorks of Southwest General**  
7390 Old Oak Boulevard  
Middleburg Heights, OH 44130  
T: 440-816-8010 | F: 440-816-4850

**UH Parma Medical Center at City  
of Seven Hills Recreation Center**  
7777 Summitview Drive  
Seven Hills, OH 44131  
T: 216-236-6146 | F: 216-236-6167

**UH Parma Medical Center  
Fitworks Fitness & Sports Therapy**  
7723 Ridgewood Drive  
Parma, OH 44129  
T: 440-885-3229 | F: 440-885-3242

**\*UH Parma Medical Center  
Medical Arts Center 1**  
6681 Ridge Road, Suite 102  
Parma, OH 44129  
T: 440-743-4025 | F: 440-743-3221

**UH Parma Medical Center  
OP Rehab – North Royalton YMCA**  
11409 State Road  
North Royalton, OH 44133  
T: 440-877-9120 | F: 440-877-9121

**UH Rehabilitation Services  
& Sports Medicine at  
UH Avon Health Center**  
1997 Healthway Drive  
Avon, OH 44011  
T: 440-988-6890 | F: 440-988-6895

**UH Rehabilitation Services and  
Sports Medicine at T3 Performance**  
1965 Recreation Lane  
Avon, OH 44011  
T: 440-328-3499 | F: 440-328-3495

**Southwest General –  
Brunswick Community Recreation  
and Fitness Center**  
3637 Center Road  
Brunswick, OH 44212  
T: 330-558-0180 | F: 330-558-6873

## EAST

**UH Cleveland Medical Center  
Bolwell Health Center**  
11100 Euclid Avenue, Suite 4100  
Cleveland, OH 44106  
T: 216-844-7868 | F: 216-844-8964

**UH Bedford Medical Center,  
a campus of UH Regional Hospitals**  
44 Blaine Avenue  
Bedford, OH 44146  
T: 440-735-4748 | F: 440-735-3504

**\*UH Conneaut Medical Center**  
158 West Main Road  
Conneaut, OH 44030  
T: 440-593-0356 | F: 440-593-6710

**UH Geneva Medical Center**  
870 West Main Street  
Geneva, OH 44041  
T: 440-415-0178 | F: 440-415-0215

**\*UH Richmond Medical Center,  
a campus of UH Regional Hospitals**  
27100 Chardon Road  
Richmond Heights, OH 44143  
T: 440-585-4151 | F: 440-585-4257

**\*UH Geauga Medical Center Rehab  
at Concord Health Center**  
7500 Auburn Road, Suite 1375  
Concord Township, OH 44077  
T: 440-358-5475 or 440-358-5492  
F: 216-201-6437

**UH Mayfield Village Health Center**  
730 SOM Center Road, Suite 330  
Mayfield Village, OH 44143  
T: 440-684-1833 | F: 440-684-1856

**UH Mentor Health Center**  
9000 Mentor Avenue, Suite 206  
Mentor, OH 44060  
T: 440-974-4433 | F: 440-974-4430

**UH Geauga Medical Center  
Rehab at the YMCA**  
12460 Bass Lake Road  
Chardon, OH 44024  
T: 440-214-3100 or 440-214-3101  
F: 216-201-5467

**Rehabilitation & Sports Medicine  
at Mandel Jewish Community  
Center (JCC)**  
26001 South Woodland Boulevard  
Beachwood, OH 44122  
T: 216-285-7868 | F: 216-201-5489

**\*Warrensville Outpatient  
and Neuro Rehab Center**  
4480 Richmond Road  
Warrensville Heights, OH 44128  
T: 216-765-2830 | F: 216-765-2835

## SOUTH

**\*UH Portage Medical Center**  
6847 North Chestnut Street, Suite 100  
Ravenna, OH 44266-1204  
T: 330-297-2770 | F: 330-297-8833

**UH Fairlawn Health Center**  
3800 Embassy Parkway, Suite 110  
Fairlawn, OH 44333  
T: 330-664-8080 | F: 216-201-6376

**UH Hudson Health Center**  
5778 Darrow Road  
Hudson, OH 44236  
T: 330-655-5026 | F: 330-650-5005

**UH Rehabilitation Services, Kent**  
1850 State Route 59, Suite B  
Kent, OH 44240  
T: 330-676-9544 | F: 330-676-9547

**\*UH Samaritan  
Rehabilitation Services**  
2163 Claremont Avenue  
Ashland, OH 44805  
T: 419-281-1330 | F: 419-281-4850

**UH Streetsboro Health Center**  
9318 State Route 14  
Streetsboro, OH 44241  
T: 330-626-5701 | F: 330-626-4064

**UH Twinsburg Health Center**  
8819 Commons Boulevard, Suite 201  
Twinsburg, OH 44087  
T: 330-486-9610 | F: 330-486-9611

**UH Walden Health Center**  
700 Walden Place  
Aurora, OH 44202  
T: 330-562-3160 | F: 330-562-2805

The offices that offer physical therapy, occupational therapy and speech therapy in one location are highlighted in red.

\* indicates neurological rehab locations



# About University Hospitals Neurological Institute

Ranked by U.S. News & World Report as one of the nation's top programs, University Hospitals Neurological Institute delivers innovative, integrated and individualized care to patients with diseases affecting the nervous system at convenient locations throughout northern Ohio.

Our multidisciplinary team of neurosurgeons and neurological specialists provides a full spectrum of services to promote, protect and restore brain health for a wide variety of diagnoses, including brain tumors, epilepsy, stroke and other cerebrovascular disorders, spine and pain disorders, Parkinson's, Alzheimer's and more. Leading experts in neurology, neurosurgery, neuroradiology and other specialties collaborate to devise personalized care plans using the latest clinical advances and leading-edge technologies through our 15 Centers of Excellence:

## CENTERS OF EXCELLENCE

Brain Health & Memory Center	Neurological & Behavioral Outcomes Center
Brain Tumor & Neuro-Oncology Center	Neuromuscular Center
Community Neurology Center	Neuropsychiatry Center
Comprehensive Stroke Center	Neuroscience Nursing Practice Center
Epilepsy Center	Parkinson's & Movement Disorders Center
Functional & Restorative Neurosurgery Center	Spinal Neurosurgery Center
Music & Medicine Center	Traumatic Brain Injury Center
Neurocritical Care Center	

## MAKE AN APPOINTMENT

To make an appointment, please call 216-844-2724.

## Warning Signs of Stroke

The most effective stroke treatments are only available if the stroke is recognized and diagnosed early.

### **Use B.E. F.A.S.T. to recognize stroke symptoms:**

**BALANCE**.. Is balance suddenly off?

**EYES** ..... Experiencing blurry or double vision?

**FACE**..... Does one side of the face droop when smiling?

**ARMS** ..... Does one arm drift downward when arms are raised?

**SPEECH** ..... Are words slurred? Can sentences be repeated correctly?

**TIME**..... If a person shows any of these symptoms, time is important. Call 9-1-1 or get to the hospital fast.

**[Uhhospitals.org/Stroke](https://www.uhhospitals.org/Stroke) | 216-844-2724**